General Description

Specifically designed for water billing applications, Omega FTB-4000 and FTB-5000 Series Flow meters are highly accurate and feature tamper-resistant, non-resettable totalizers. The large faces are easy to read and are fully rotatable for simplified mounting. FTB-4605 and FTB-4607 have no local indication of the flow rate or total.

Optional reed relay scaled pulse outputs allow for remote totalization (6 feet of cable included). For the FTB-4000 Series, the pulse output is factory installed and must be requested at the time of order.

The FTB-5000 Series units feature field installation of the reed relay or optical pickup pulse outputs. The optical pickup is used for use with flow rate frequency meters to provide remote rate indication (user DC power input required). FTB-5000 units are supplied standard with one reed relay for remote totalization; a second relay is optional.

All FTB flow meters feature built-in strainers and are shipped complete with locking nuts, gaskets and coupling pieces. The units have a built-in flow finder which registers even a small trickle of water passing through the meter.

WARNING

THESE WATER FLOW METERS HAVE PLASTIC INTERNAL PARTS THAT ARE RAPIDLY ATTACKED BY HYDROCARBON FLUIDS, SUCH AS GASOLINE, DIESEL FUEL, KEROSENE, AND SIMILAR MATERIALS. EVEN TRACE AMOUNTS OF THESE MATERIALS IN WATER WILL TEND TO ACCUMULATE IN THE PLASTIC PARTS LEADING TO COMPLETE FAILURE OF THE FLOW METER. NOTE: WATER AND ETHYLENE GLYCOL MIXTURES TYPICALLY PRESENT NO PROBLEM WHEN USED WITH THESE WATER FLOWMETERS.

UNPACKING

Remove the packing list and verify that all equipment has been received. If there are any questions about the shipment, please call the Omega Customer Service Department.

Upon receipt of shipment, inspect the container and equipment for any signs of damage. Take particular note of any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

NOTE

The carrier will not honor any claims unless all shipping material is saved for their examination. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

MOUNTING

The FTB-4000 Series (only all 1/2” and 3/4”) can be mounted either horizontally or vertically. All FTB-4000 Series 1”, 1 1/4”, 1 1/2” and 2” horizontal only. FTB-5000X - FTB-5020 horizontal only. FTB-5020X to FTB-5080 all can be mounted either horizontally or vertically.
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P+ = Pulse Output Models
C = Union Coupling connections with NPT threads
FL = Flanged interconnection (conforms to ANSI B 16.5-150 lbs.)
* Height increases by approximately 2 inches with pulse output
Optional reed relay for remote totalization-order model FTB-RR
SPECIFICATIONS (CONT’D)

**ACCURACY:**
- **4600 Series:**
  - From 10% of cont. to max. flow: ± 1.5% of reading
  - Below 10% of cont. flow: ± 2% of reading
- **4000, 5000 Series:**
  - From 20% of cont. to max. flow: ± 1% of reading
  - Below 20% of cont. flow: ± 3% of reading

**MAX. TEMPERATURE:**
- **4000 Series:** 122°F (50°C)
- **4100 Series:** 190°F (87.7°C)
- **4600 Series:** 190°F (87.7°C)
- **5000 Series:** 248°F (120°C)

**MAX. PRESSURE:**
- **4000, 4600 Series:** 150 PSI
- **5000 Series:** 250 PSI

**PULSE OUTPUTS:**
- **4100P Series:** 1 gal./pulse
- **5010 - 5020:**
  - 1 or 10 gal./pulse
- **5020X - 5040:**
  - 10 gal./pulse
- **5060 & 5080:**
  - 100 gal./pulse

**FTB4600 HIGH RESOLUTION PULSE OUTPUT:**
- **FTB4605:** 151.4 pulses/gal.
- **FTB4607:** 75.7 pulses/gal. Requires 6-16 VDC @ 10mA max power; output requires pull-up to positive DC voltage.

**(OPTICAL PICKUP (= MIN. INCREMENT):**
- **5010 - 5020X:** 0.5 gal./pulse
- **5030 & 5040:** 1 gal./pulse
- **5060 & 5080:** 5 gal./pulse

**MAX. READING (GAL.):**
- **4000 Series:** 100,000,000
- **5010 - 5040:** 10,000,000
- **5060 - 5080:** 100,000,000

**HOUSING:**
- **4000, 4100, 5005 - 5015:** Cast brass
- **5020 - 5080:** Cast iron
- **4600 Series:** Brass

**BEARING:**
- Ceramic/sapphire

**TURBINE:**
- High temperature thermoplastic/fiberglass (polyimide)

**FLOW TRANSFER:**
- Ceramic magnet

**OTHER WETTED PARTS:**
- Stainless steel, polypropylene, EPDM O-ring
NEW MODEL

INSTALLATION INSTRUCTIONS
Of Hall Effect Flow Meter

FLOW METER INSTALLATION
1. Make sure that the inside of the pipes are totally clean.
2. Install Water Meter with union connection.
3. Make sure flow direction of water corresponds with flow indicator arrow on flow meter housing.

ELECTRICAL CONNECTION TO HALL EFFECT
1. Make wiring connection as indicated on diagram below.
2. Please note: $3.5 \text{ V} < U_8 < 20 \text{ V}$ $I_{out\ max.} = 20 \text{ mA}$
3. The pull-up-resistor R should be a min. of 1 k ohms. On installation without C a value of 10 k ohms is recommended. In case of clicking disturbances due to the contactor (e.g. radiowave receivers being in the area) a wiring with $C= 4.7 \text{ nF}$ and $R \geq 1 \text{ k ohms}$ should be used.

Electrical Connection Diagram

[Diagram of Electrical Connection]

Hall Effect (New), rev 12/01
OMEGER ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA’s WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA’s customers receive maximum coverage on each product. If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA’s Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA’s WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA’s control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a “Basic Component” under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY / DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA’S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

For WARRANTY returns, please have the following information available BEFORE contacting OMEGA:
1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

For NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:
1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA’s policy is make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering. OMEGA is a trademark of OMEGA ENGINEERING, INC.

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